

If cell A1 contains the numerical value 4 and cell B1 contains the numerical value 5, the above examples would yield results of FALSE, FALSE, TRUE, FALSE, TRUE, and TRUE.

### Text operators

It is common for users to place text in spreadsheets. To provide for variability in what and how this type of data is displayed, text can be joined together in pieces coming from different places on the spreadsheet. Figure 219 shows an example.

The figure consists of two screenshots of a spreadsheet interface. The top screenshot shows a spreadsheet with columns A through G and rows 1 through 4. Cell B2 contains the text 'June', cell C2 contains the text '23', and cell D2 contains the text '2010'. The formula bar at the top shows the formula '= B2 & " " & C2 & ", " & D2'. The bottom screenshot shows the same spreadsheet, but now cell F2 displays the result of the formula: 'June 23, 2010'. The formula bar still shows the same formula.

	A	B	C	D	E	F	G
1							
2		June	23	2010		= B2 & " " & C2 & ", " & D2	
3							
4							

  

	A	B	C	D	E	F	G
1							
2		June	23	2010		June 23, 2010	
3							
4							

Figure 219: Text concatenation

In this example, specific pieces of the text were found in three different cells. To join these segments together, the formula also adds required spaces and punctuation enclosed within quotation marks, resulting in a formula of `=B2 & " " & C2 & ", " & D2`. The result is the concatenation into a date formatted in a particular sequence.

Calc has a `CONCATENATE` function which performs the same operation.

### Reference operators

An individual cell is identified by the column identifier (letter) located along the top of the columns and a row identifier (number) found along the left-hand side of the spreadsheet. On spreadsheets read from left to right, the reference for the upper left cell is A1.

Thus in its simplest form a reference refers to a single cell, but references can also refer to a rectangle or cuboid range, or a reference in a list of references. To build such references you need reference operators.

#### Reference range operator

The range operator is written as a colon. An expression using the range operator has the following syntax:

reference upper left : reference lower right

The range operator builds a reference to the smallest range including both the cells referenced with the left reference and the cells referenced with the right reference.

In the upper left corner of Figure 220 the reference A1:D12 is shown, corresponding to the cells included in the drag operation with the mouse to highlight the range.